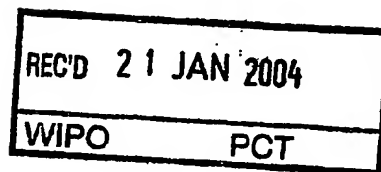


PCT/NZ03/00295



CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 3 January 2003 with an application for Letters Patent number 523406 made by SJI LIMITED.

Dated 9 January 2004.

Neville Harris
Commissioner of Patents, Trade Marks and Designs



**PRIORITY
DOCUMENT**

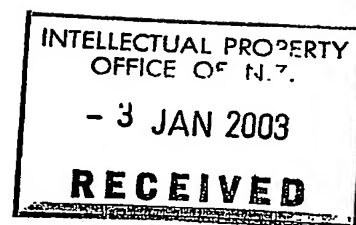
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**PATENTS ACT 1953****PROVISIONAL SPECIFICATION**Insert Title of
Invention**AN ADDITIVE RELEASING BOTTLE**Insert full name,
full street address
and nationality of
(each) applicant

I/WE SJI LIMITED, a New Zealand company having its registered head office c/- Holland Beckett Maltby, Barristers & Solicitors, 96 Cameron Road, Tauranga, New Zealand

do hereby declare this invention to be described in the following statement:-

AN ADDITIVE RELEASING BOTTLE

TECHNICAL FIELD

This invention relates to additive releasing bottle. The additive
10 releasing bottle provides a means for separately retaining a fluid
and an additive (preferably in the form of a tablet such as a vitamin
tablet or pharmaceutical preparation) and also a means for releasing
the tablet into the fluid held in the bottle. The additive releasing
bottle also includes a means to dispense the combined fluid and
15 additive.

BACKGROUND ART

20 Bottle caps designed to retain an additive such as a powder or
tablet or liquid and to subsequently release the additive into the
attached bottle upon manipulation by a user are known in the
pharmaceutical industry and more recently in the sports drinks

industry. Examples of such discharge caps are disclosed in WO98/40289, WO00/27717, WO98/00348 and WO93/14990.

Many of the prior art mechanisms are cumbersome and their size can cause difficulties in the packaging, transportation and display of bottles. Their bulk may also detract from the appearance of the product which is of importance in relation to certain products such as sports drinks. Others may be complex and difficult or costly to manufacture.

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DISCLOSURE OF INVENTION

The present invention broadly consists in an additive releasing bottle consisting of:

- 15 -a base having an aperture therethrough and adapted to engage a bottle body and to engage a pressing means,
 - a bottle body being substantially open at an end and being adapted to engage with the base at said end and having an aperture that is closable and sealable adapted for dispensing a fluid
 - 20 in use,
 - a pressing means adapted to engage with the base,
- the construction and arrangement being such that, in use, the engagement of the base with the bottle body and pressing means

effectively provides a receptacle for a fluid and retains an additive in a blister pack and seals the end of the bottle body that is substantially open, the additive in the blister pack being retained adjacent to both the base and the pressing means so that upon
5 manipulation of the pressing means by a user, pressure may be exerted on the additive by the pressing means to cause rupture of the blister pack and the release of the additive from the blister pack.

10 Preferably the additive is a tablet.

Preferably, the bottle body is substantially cylindrical and the bottle body and base are engagable by way of complementary threading.

15 Preferably the pressing means consists of a ring of plastic spanned by a flexible diaphragm.

Preferably the ring has an annular protrusion complementary to an annular groove in the base allowing the pressing means to be
20 securely snap fitted into the base.

Preferably the tablet is sealed inside a blister pack that consists of a first side and a second side, the first side being substantially flat

and made of an easily ruptured material and the second side being contoured in accordance with the shape of the tablet and made of a flexible material that is stronger than that of the first side.

- 5 Preferably the first side of the blister pack is made of a light foil and the second side is made of a flexible plastic film.

Preferably the blister pack will have a perimeter ring of compressible material.

10

Preferably, the blister pack will be retained between the base and the pressing means by way of the perimeter ring of compressible material being held between and immediately adjacent to the base and the pressing means when the pressing means is engaged with

- 15 the base.

BRIEF DESCRIPTION OF DRAWINGS

The above gives a broad description of the present invention, one preferred form of which will now be described with reference to the accompanying drawing in which:

20

Figure 1 shows a side elevation view of a preferred form of the additive releasing bottle of the present invention.

Figure 2 shows a side elevation, cross-section perspective view of
5 a preferred form of the additive releasing bottle of the present invention.

Figure 3 shows a perspective view from below of a preferred form of the additive releasing bottle of the present invention.

10

Figure 4 shows a side elevation, cross-section perspective view of the lower region of a preferred form of the additive releasing bottle of the present invention.

15 Figure 5 shows a side elevation view in cross-section of a preferred form of the bottle body element of the additive releasing bottle of the present invention.

Figure 6 shows a side elevation cross-section view of the base
20 section of the additive releasing bottle of the present invention.

Figure 7 shows a side elevation view of the base section of the additive releasing bottle of the present invention.

Figure 8 shows a perspective view from above of the base section of the additive releasing bottle of the present invention.

- 5 Figure 9 shows a perspective view from below of the base section of the additive releasing bottle of the present invention.

- Figure 10 shows a perspective view from above of a preferred form of the pressing means of the additive releasing bottle of the present
10 invention.

Figure 11 shows a side elevation cross-section view of a preferred form of the pressing means of the additive releasing bottle of the present invention.

15

Figure 12 shows a perspective view from of a preferred form of the blister pack and tablet of the additive releasing bottle of the present invention.

- 20 Figure 13 shows a side elevation cross-section view of a preferred form of the blister pack and tablet of the additive releasing bottle of the present invention.

The preferred form of the additive releasing bottle of the present invention as shown in Figures 1 to 3 is a additive releasing bottle adapted for use as a drink dispenser. Figure 1-3 show a bottle
5 body 2 engaged at one end to a base 3 and having an aperture 4 adapted into a drinking nozzle in the form of a sipper cap and nozzle 41. In other forms of the invention the aperture may be a threaded bottle neck 42 with a cap as shown in Figure 5 (cap not shown). The aperture is hidden in Figures 1 and 3 by a cap 5.

10

As shown in Figures 2, 4 and 5, the end of the bottle body 2 that engages with the base 3 has threading 21 that is engagable with the base's complementary threading 31. The base has an aperture 33 through it. The base 3 also has an annular groove 32 best
15 shown in Figures 4 and 6.

The pressing means in the form of a push button 6 as shown in Figures 10 and 11 consists of a ring 61 spanned by a diaphragm 62 of a resilient material. The ring 61 has an annular protrusion 63
20 extending from it that complements the annular groove 32 in the base. The push button 6 can be engaged with the base 3 by snap fitting the push button 6 into the base 3 by way of the interaction

between the base and its annular groove 32 and the push button and its annular protrusion 63 as shown in Figure 4.

A blister pack 7 as shown in Figures 12 and 13 contains an additive in the form of a tablet 71 as shown in Figure 13. The tablet 71 is encased in the blister pack 7 which is comprised of a flat and thin foil 72 and a resilient domed film 73 sealed hermetically together. The perimeter 74 of the blister pack 7 may have attached thereto a ring of compressible material such as a foam (not shown).

In use the blister pack 7 and tablet 71 are inserted between the base 3 and the pressing means/push button. The ring of compressible material on the perimeter of the blister pack aids in sealing the engagement. The thin foil side 72 of the blister pack is positioned adjacent to the aperture 33 in the base while the side of the blister pack comprised of a resilient domed film 73 is adjacent to the push button's diaphragm 62.

In other forms of the invention the blister pack may be retained by being locked between the bottle body and the base and the pressing means may be an integral part of the base.

In use the tablet and blister pack are retained by the pressing means and the base and the base is engaged with the bottle body. In this form the components form a bottle or receptacle that can hold a fluid. The bottle body is filled with a fluid such as water and the nozzle on the bottle body is closed. A user manipulates the pressing means. The force exerted by the user is transferred through the pressing means (in the case of a push button, by distorting the resilient diaphragm) to the blister pack and tablet causing the thin foil side of the blister pack to rupture and release the tablet whereby it contacts the fluid in the bottle and dissolves. Although the pressing means may be distorted it remains intact sealing the bottom of the bottle.

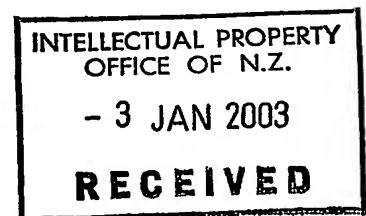
The base should be constructed in such a way so that when the assembled bottle is seated upright the base extends beyond the pressing means so that the pressing means is not accidentally depressed by the weight of the bottle.

The present invention provides a compact means of retaining two separate ingredients and allowing them to be kept separate until they are mixed at a time determined by the user. The present invention has applications to sports and health drink products but also may be applied for use in any circumstances where two

components must be or should be kept separate during storage but mixed prior to use. Such applications could include health supplements, medicines, adhesives, and cosmetic products to name a few. The device is particularly useful in cases where the additive may degrade over time when dissolved or exposed to air or fluids.

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SJI LIMITED
by their authorised agents
J.D. HARDIE & CO.
per: *C. Osborne*



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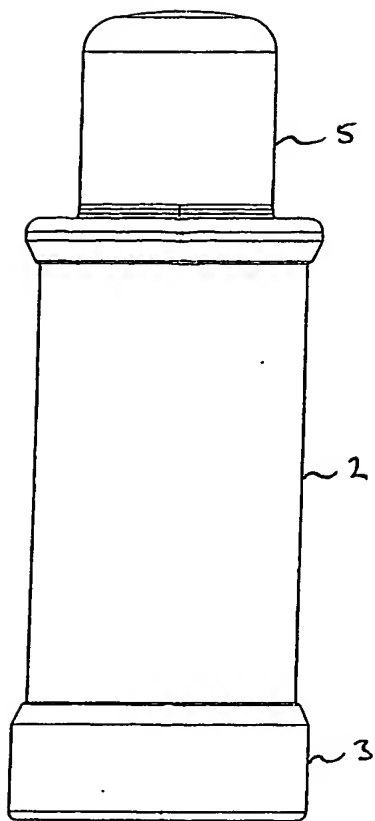


FIG. 1

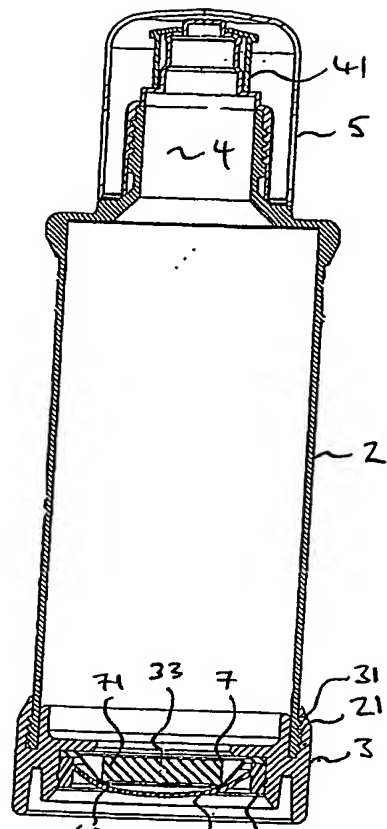


FIG. 2

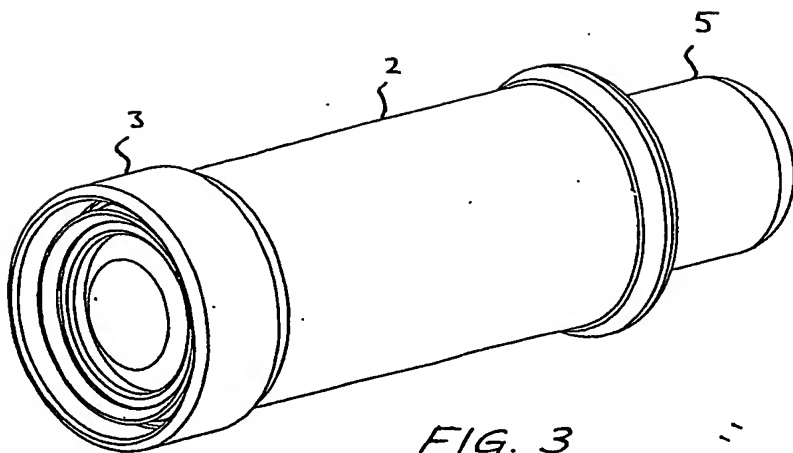
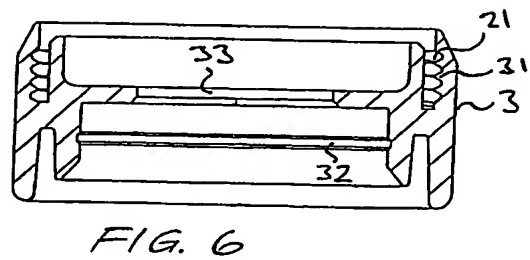
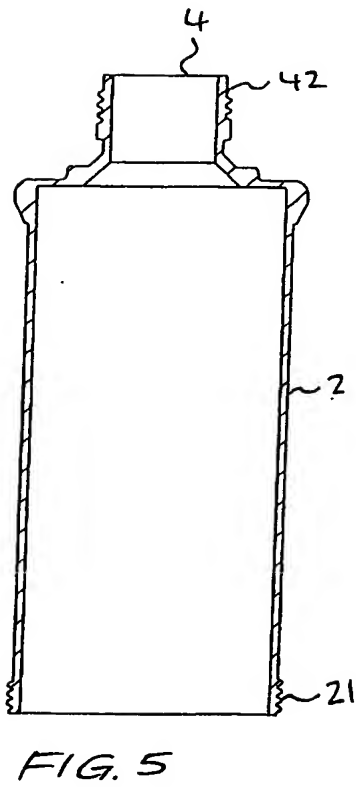
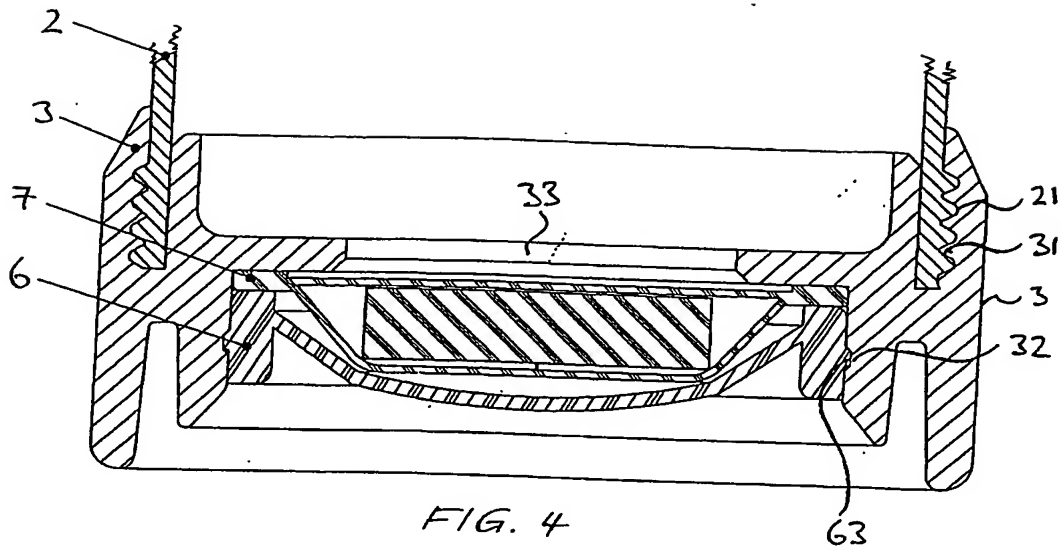


FIG. 3



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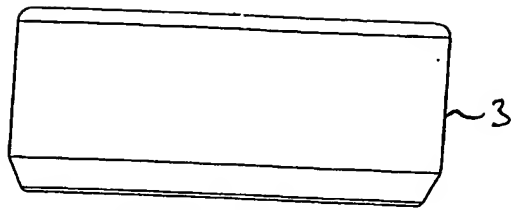


FIG. 7

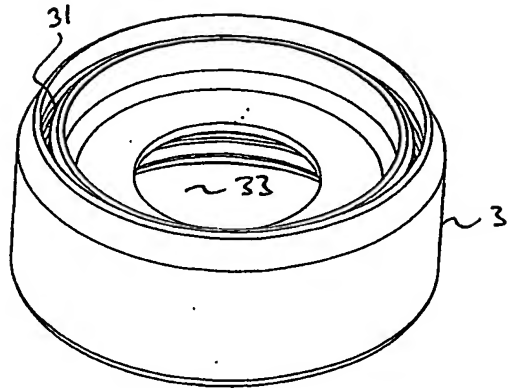


FIG. 8

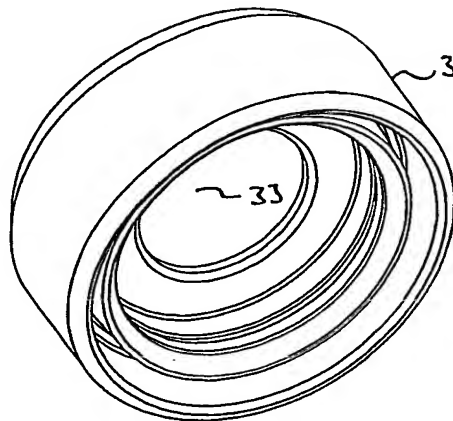


FIG. 9

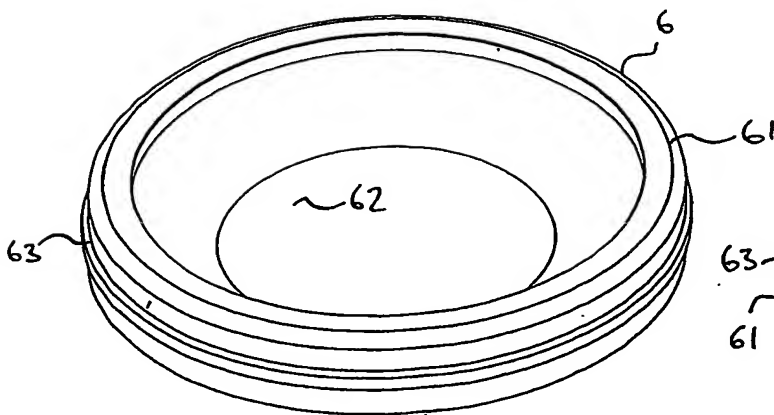


FIG. 10

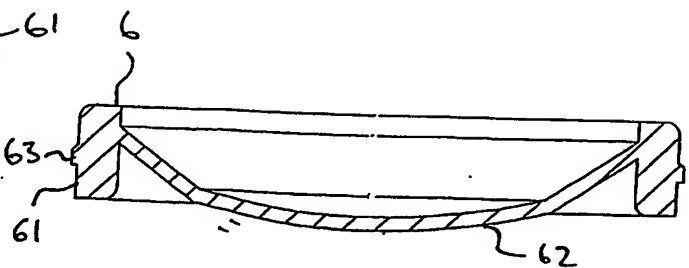


FIG. 11

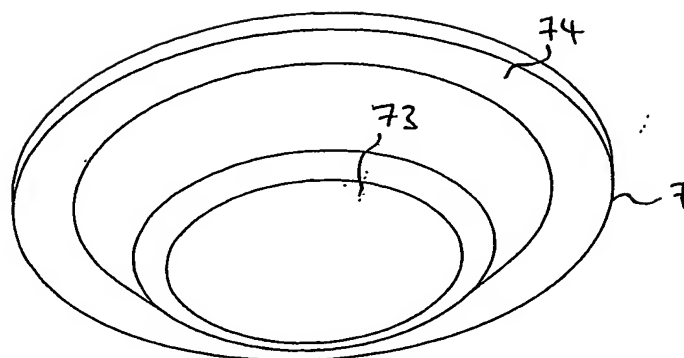
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FIG. 12

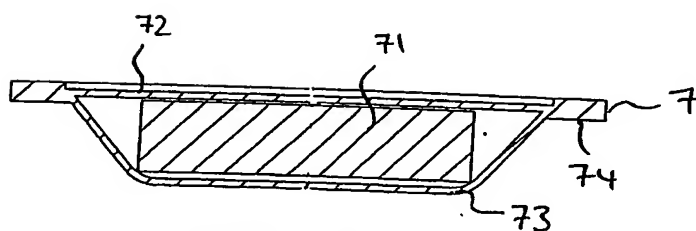


FIG. 13